serrapilheira

First private nonprofit institution to promote science in Brazil

Call to support early-stage scientists

nº6/2022

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Great science starts with big questions.

The submission window is open from October 28 to November 28, 2022

This sixth call of the Serrapilheira Institute is intended to fund early-stage scientists interested in addressing big questions in their areas of expertise.

This edition will include research in natural sciences, mathematics, and computer science.

Each selected project will receive allocations between 200 thousand reais and 700 thousand reais to be distributed over five years.

The selection, in two stages, is performed by renowned experts in their fields of knowledge.

The following document contains the application conditions, the submission rules, and the selection criteria.

Summary

1. Timeline

August 31, 2022
Public call launched

October 28, 2022/3:00 pm (Brasília time)
Submission window opens for pre-proposals (phase 1)

November 28, 2022/3:00 pm (Brasília time)
Deadline for submission of pre-proposals (phase 1)

February 16, 2023
Disclosure of the names selected for phase 2 and call
for the submission of full proposals

April 17, 2023/3:00 pm (Brasília time)
Deadline for submission of full proposals (phase 2)

June 28, 2023
Disclosure of the selected names

July 28, 2023
Starting date for support

Application from October 28 to November 28, 2022

2. Understanding our support

Early-stage scientists
By supporting science in a private and nonprofit way, Serrapilheira wants to create the necessary conditions for young scientists in Brazil to develop their research with financial resources, project choice autonomy, and management flexibility.

Serrapilheira identifies the achievement of a formal position as a professor or researcher as one of the key moments in the academic trajectory of a scientist. This achievement comes with the challenges of building or consolidating lines of research independent from those of their advisors, including structuring a research group and guaranteeing the necessary infrastructure (physical space, lab reagents, among others) for the project development. Financial resources are essential to responding to these challenges, and it is not always easy for professors or researchers to obtain their first independent sources of funding through the regular lines of science funding. For this reason, the objective of this call is to support the career development of young scientists at this crucial time in their lives.

Major contributions to science
The mission of Serrapilheira is to fund scientists who seek excellence in their research, asking fundamental questions, with the risk and the dream of making great contributions to their areas of expertise.

Great contributions to science are favored when scientists have the infrastructure, time, and autonomy to develop their projects and an environment rich in ideas. Thus, believing in the inventive capacity of scientists, Serrapilheira offers long-term financial resources and flexibility. The institute also acknowledges that a plurality of points of view enriches scientific fields, favoring an environment conducive to the emergence of great contributions.

Big questions
Big questions are those that question current scientific knowledge, open new perspectives for advancement, or deepen the knowledge in a scientific area. Projects of this nature concern "what", "when", "why", and "how" questions and not utilitarian questions (e.g. "what is it for").

Supported areas
Natural sciences
Mathematics
Computer science

Natural sciences

In the institute´s understanding, the natural sciences are all those that investigate nature by trying to understand it in its most general and essential aspects. We understand natural sciences to mean life sciences, physics, geosciences, and chemistry.

Interdisciplinarity

Interdisciplinary proposals in these areas are equally welcome.

Projects eligible for support

Original and bold projects will be supported, especially risky projects.

Risk

For Serrapilheira, risk is welcome and essential for the advancement of science. In the understanding of the institute, risk can be:

- **hypothesis conception:** the assumptions behind the hypothesis may be flawed or the hypothesis might not provide an answer to the big question (for example, the proposed effect may not exist or not be universal; the proposed effect may not be related to the big question; other hypotheses may better explain the data; the hypothesis may go against established knowledge or dominant knowledge of the field).

- **approach**: the proposed methodological approach, even if successful, may not be able to provide adequate and useful information to test the proposed hypothesis (for example, the approach is unconventional/heterodox; the object of study is very complex or variable for the approach; the data that will be obtained have little relationship with the hypothesis; the current knowledge of the field considers the approach impossible).

- **technical**: obtaining the data according to the proposed methodology may be technically challenging (for example, the methods are difficult to implement; they include critical steps that can fail; they require considerable persistence and trial and error; they involve the manipulation of complex equipment; they require field experiments or large-scale experiments; the object of study has a long natural timescale - geological timescales or animals/plants with long life cycles - or has many uncontrollable conditions).

Serrapilheira encourages the submission of risky projects in the first two senses, i.e., that propose bold hypotheses and approaches. In contrast, high technical risk, when present, should be mitigated by anticipating the methodological challenges and presenting alternatives. The project is expected to be technically robust.

Projects not eligible for support
Projects that are a clear repetition of previous projects will not be supported. It is necessary for projects to propose new contributions.

Proposals focused exclusively on applied science, with utilitarian questions and without a focus on knowledge production, are not within the scope of the call.

Projects focused exclusively on clinical trials, public health studies, the development of biomarkers or agricultural or industrial processes and products will not be supported.

3. Support and budget

The Serrapilheira Institute will finance a maximum of ten young scientists, with allocations between 200 thousand reais and 700 thousand reais per project, to be distributed over five years.

Resource allocation
The requested resources should be allocated to achieve the goals listed in the project.

The Serrapilheira Institute understands that the values of institutional demands and the nature of projects (theoretical compared to experimental) vary based on the area of knowledge considered and the region of Brazil where the work is performed. For this reason, budgets with different values are expected within the range of 200 thousand reais and 700 thousand reais.

During project execution, the selected scientists will be able to access, in the form of bonuses, additional resources specifically intended for the integration and training of people from underrepresented groups in the research teams. Scientists may present a proposal to compete for these additional resources. Participation in this competition is voluntary. These inclusion actions aim to promote greater diversity in Brazilian science.

The implementation of the bonus to train people from underrepresented groups in the different research areas will be discussed with each scientist selected through this call. The value of the bonus will depend on the inclusion action to be developed and may reach 30% of the total value of the original budget approved for the development of the research. Therefore, the request for diversity bonus resources should not be included in the budget proposal for the research project.

Renewal

After five years of support, under a few exceptional instances, projects may be renewed annually for an indefinite period. The renewal will include only scientists who do not have resources from other sources.

About the Program

In addition to providing financial resources, the Science Program promotes training, workshops, and integration events for scientists, such as Serrapilheira Scientific Retreats, which takes place annually. With this, the institute aims to improve the training and development of the careers of scientists, stimulating interdisciplinary cooperation and initiatives in diversity in science, science outreach, and open science.

Beginning of support

The official start date of the support will be July 28, 2023.

Use of resources

Serrapilheira offers flexibility in the use of resources throughout the execution of the supported proposal. Proponents can use the resources provided as they deem best for the development of the research, as long as the expenditures are associated with the project objectives.

The calculation for the remuneration of scholarships and salaries allocated to the teams of the selected scientists should be guided by the reference values of the institute (Appendix 1).

Funding conditions and financial management

The funding conditions are established by Serrapilheira. The grants are allocated directly to research and should be managed by a foundation indicated by the institute and not by the host institution to which the scientists are linked. We encourage host institutions to offer scientists appropriate conditions for the development of their projects. The contract will be signed by the foundation, the scientist, the host institution, and Serrapilheira.

After the contract is made available for electronic signature, all participants must sign it within a maximum period of four months. If this deadline is not met, the contract may be canceled by Serrapilheira under contractual noncompliance terms, and support to the scientist may not be granted.

Administrative fees

Any administrative fees related to the management of financial support will be directly deducted from the amounts allocated to the projects. The scientists will be free to negotiate the overhead paid to their host institutions within a range between 2% and 5% of the allocation amount. This percentage is intended to cover the costs of operation and basic

infrastructure provided by the host institutions. Up to 8% of the value of the grant will be allocated to the entity responsible for the financial management of the project; this entity will be indicated by Serrapilheira. Thus, we estimate that the net value allocated to the research will be between 87% and 90% of the original value.

4. Conditions for acceptance of applications

The criteria for accepting applications are as follows:

Year of doctoral degree
Candidates must have received a doctoral degree between January 1, 2015, and December 31, 2020. This condition will be adjusted by up to two years for women with children. Thus, women with a single child should have obtained a doctorate between January 1, 2014, and December 31, 2020, and women with two or more children between January 1, 2013, and December 31, 2020. The thesis defense date will be considered for the acceptance of applications, not the date of issuance of the diploma. The date of completion of the doctorate should be strictly in accordance with the conditions above.

Affiliation with the Brazilian host institution
Candidates must perform scientific research and hold a permanent position - as professor or researcher - at a public or private university, institute, or entity based in Brazil.

Partners of technology-based companies/startups and public servants in technical positions may apply as long as they effectively conduct research at the host institution.

Ineligibility
Graduate students, postdocs, substitute professors, collaborating researchers, visiting researchers, and volunteer researchers are not eligible.

Publication of scientific articles
Candidates must be the main authors of at least two published scientific articles of impact. The main author is the one who made the greatest contribution to the work, not necessarily the head of the laboratory or the leader of the research group.

By "impact", we mean the effect that the article had on questioning, advancing, or deepening knowledge in the field. Thus, the candidate must

justify why they consider their articles impactful based on the content and intellectual contribution of their work (see section "How to apply").

Location where research will take place
The projects must be conducted in Brazil, although some research activity can be conducted abroad, such as field work or collaborative research. Scientists working exclusively in foreign institutions are not qualified to receive funding from Serrapilheira through this call, and there is no portability of our allocations to other countries.

Submission limit
Each candidate may submit only one proposal per call and a maximum of two proposals during the entire period in which they are eligible. This rule became effective with call 4/2020.

Scientists who have received previous resources from Serrapilheira and have not had their support renewed may submit proposals again.

Language
As the selection of proposals will be conducted by scientists working in international institutions, all fields of the registration and application forms must be completed in English, which is also the language for writing the projects. Since the interviews of those selected for phase 2 will be in English, the candidates must be proficient in this language. They must be able to present their ideas and defend their project to a panel of international evaluators.

Supported areas
The projects must contribute to fundamental knowledge in at least one of the following areas: natural sciences, mathematics, and computer science. In the understanding of Serrapilheira, the natural sciences are all sciences that investigate nature, attempting to understand it in its most general and essential aspects. The natural sciences primarily include life sciences, physics, geosciences, and chemistry.

Electronic submission
Proposals must be submitted electronically through the Serrapilheira portal at Fluxx (**https://serrapilheira.fluxx.io**) within the deadlines established in this call.

Curriculum vitae
The curriculum vitae (PDF) of the proponent must not exceed two pages and should follow the model available at **http://bit.ly/2kDe1Z2**. Resumes using other templates will not be considered.

Applications that do not meet the above conditions will not be processed.

5. Applications

Proposals will be submitted in two phases: phase 1 (pre-proposals) and phase 2 (full proposals).

6. How to apply for phase 1: Pre-proposals

Opening of the submission portal
Candidates must access the proposal submission portal, which will be open from October 28, 2022, at 3:00 pm (Brasília time).

Access to the submission portal
Address: **https://serrapilheira.fluxx.io**

Submission window of pre-proposals
October 28 to November 28, 2022, at 3:00 pm
(Brasília time)

Registration
Data
  • name
  • email
  • telephone

Eligibility requirements
After completing the registration, the candidates are directed to the eligibility test to confirm that they meet the criteria established for this call.

Eligibility is validated by the Serrapilheira team within 24 hours.

Application form
After completing the registration and eligibility data, the applicants are directed to the application form, consisting of the sections "About the proponent" and "About the project", whose fields must be filled in the system itself.

About the candidate

Personal data
- nationality
- date of birth
- birth city/state/country
- institution
- address/city/state/postal code
- gender
- race/ethnicity
- link to Lattes curriculum vitae
- link to Google Scholar profile
- ORCID identification number
- link to laboratory website (optional)
- profile on social networks (optional)

Academic trajectory
- undergraduate degree, master's (if applicable), doctoral degree, postdoctoral researcher (if applicable)
- year of doctoral degree
- year of employment at the institution
- independent funding for research, not including scholarships (if applicable)

Publications
- titles and PDF files of up to five scientific articles already published where the candidate was the main author or collaborative articles (studies to which the candidate contributed most and not necessarily those in which they led the research group or laboratory), with the indication of those that the candidate judges to be more impactful

- description of **the candidate´s contribution to science thus far**, explaining:

    i. why they chose these studies?
    ii. why they considered them impactful
    iii. how the idea for this publication came about

This section will play a critical role in the first evaluation of the proposals. We recommend that candidates dedicate time to and reflect on this step.

Curriculum vitae
Curriculum vitae (PDF), maximum of two pages, strictly following the model available at: : **http://bit.ly/2kDe1Z2**

About the project

Title
The title of the project must be the big question and easily understandable by non-experts in the field. No jargon. It must end with a question mark.
(up to 150 characters with spaces)

Main area
- Natural sciences: life sciences, physics, geosciences, and chemistry
- Computer science
- Mathematics

Secondary area (if relevant)
- Natural sciences: life sciences, physics, geosciences, and chemistry
- Computer science
- Mathematics

Keywords
Indication of three keywords that generally describe the subarea (examples: nanocatalysis; neurology; quantum computing; computational fluid dynamics; remote sensing; sedimentary basin analysis; stratigraphy; ecotoxicology; cosmic rays; high-energy particles; gravitational waves; symplectic geometry).

Areas and keywords
These are essential for routing the pre-proposals to appropriate evaluators.

Ten questions
- **big question:** What is your big fundamental question? No jargon. It must end with a question mark. The big question should be the title of the project.
(up to 150 characters with spaces)

- **hypothesis:** What is your specific hypothesis to answer the big question? Position your hypothesis relative to what is already known in the field.
(up to 600 characters with spaces)

- **hypothesis conception risk:** What are the limitations of your hypothesis? How might your assumptions be flawed? What are the plausible alternatives to your hypothesis?
(up to 600 characters with spaces)

- **approach:** What data will be necessary to test your hypothesis?
(up to 600 characters with spaces)

This section will play a critical role in the first evaluation of the proposals. We recommend that candidates dedicate time to and reflect on this step.

• approach risk: Why might your approach to test the hypothesis be inadequate? Are there alternative ways of testing your hypothesis?
(up to 600 characters with spaces)

• methodology: Which methods will you use to obtain the data you need?
(up to 600 characters with spaces)

• technical risk: Which challenges do you expect to have with data collection? Propose alternative technical solutions if appropriate.
(up to 600 characters with spaces)

• originality: Where is the originality in your project? Is it in the big question, in the hypothesis, in the approach, in the methods?
(up to 600 characters with spaces)

• impact: Who cares? If you are successful in this project, what difference will it make and for which fields of knowledge?
(up to 600 characters with spaces)

• origin: How did you come up with the idea for this project?
(up to 600 characters with spaces)

This section will play a critical role in the first evaluation of the proposals. We recommend that candidates dedicate time to and reflect on this step.

In the case of pure mathematics projects or those that do not involve the use of primary or secondary data, the questions will be the following:

• big question: What is your big fundamental question? No jargon. It must end with a question mark.
(up to 150 characters with spaces)

• conjecture: What is your specific conjecture? Position your conjecture relative to what is already known in the field, mention examples, if any exists.
(up to 600 characters with spaces)

• conjecture conception risk: How might your conjecture be ill-formulated? Is it possible that your conjecture follows from already established techniques? Mention specific cases already solved, if there are any.
(up to 600 characters with spaces)

• approach: What approach will you use to try to prove/disprove your conjecture?
(up to 600 characters with spaces)

This section will play a critical role in the first evaluation of the proposals. We recommend that candidates dedicate time to and reflect on this step.

• **approach risk:** Why might your approach to prove your conjecture be inadequate? What alternative approaches might be useful?
(up to 600 characters with spaces)

• **originality:** Where is the originality in your project? In the big question, in the conjecture, in the approach?
(up to 600 characters with spaces)

• **impact:** Who cares? If you are successful in this project, what difference will it make and for which fields of knowledge?
(up to 600 characters with spaces)

• **origin:** How did you come up with the idea for this project?
(up to 600 characters with spaces)

This section will play a critical role in the first evaluation of the proposals. We recommend that candidates dedicate time to and reflect on this step.

7. How to apply for phase 2: Full proposals

The candidates selected in phase 1 will be asked to submit full proposals for phase 2.

Deadline for submission of full proposals
April 17, 2023 at 3:00 pm
(Brasília time)

Access to the submission portal
Candidates must access the proposal submission portal, which will be open from March 2023 at **https://serrapilheira.fluxx.io**, and must submit the documents listed below:

Documents

Research project
The research project is an expansion of the questions raised in phase 1, including new items and following the model available at **https://bit.ly/3cwHXRk**.

It should contain:
• **title** of the project: must be the big question and easily understandable by non-experts in the field. No jargon. It must end with a question mark.
(up to 150 characters with spaces)

• **name** of the candidate

• short **summary**
(up to 2,000 characters with spaces)

• comprehensive **introduction**, including the status of the research in the area.
(up to 10,000 characters with spaces)

• **hypothesis:** What is your specific hypothesis to answer the big question?
Position your hypothesis relative to what is already known in the field.
(up to 2,500 characters with spaces)

• **hypothesis conception risk:** What are the limitations of your hypothesis?
How might your assumptions be flawed? What are the plausible alternatives
to your hypothesis?
(up to 2,000 characters with spaces)

• **approach:** What data will be necessary to test your hypothesis? If
relevant, preliminary data/results should be included here.
(up to 2,500 characters with spaces)

• **approach risk:** Why might your approach to test the hypothesis be
inadequate? Are there alternative ways of testing your hypothesis?
(up to 2,000 characters with spaces)

• **methodology:** Which methods will you use to obtain the data you need?
(up to 2,500 characters with spaces)

• **technical risk:** Which challenges do you expect to have with data
collection? Propose alternative technical solutions if appropriate.
(up to 2,000 characters with spaces)

• **originality:** Where is the originality in your project? Is it in the big question,
in the hypothesis, in the approach, in the methods?
(up to 2,000 characters with spaces)

• **impact:** Who cares? If you are successful in this project, what difference
will it make and for which fields of knowledge?
(up to 1,500 characters with spaces)

• **origin:** How did you come up with the idea for this project?
(up to 1,500 characters with spaces)

• **team:** description of the profile of the team involved in the project
(up to 2,500 characters with spaces)

• **current collaboration network:** description of the network.
(up to 2,500 characters with spaces)

• **expansion of collaborative networks:** if it is the case, describe possible strategies to expand the network; please make sure to reflect its costs on your simplified budget
(up to 1,500 characters with spaces)

• **schedule** including the main milestones and objectives. Consider milestones as achievements that testify to the success of your project (these milestones may be adjusted in the future).

• simplified **budget** (expenses can be rebalanced among these categories in the future, as long as the total remains the same).

• **bibliographic references**

In the case of pure mathematics projects or those that do not involve the use of primary or secondary data, the research project must follow the model available at https://bit.ly/3RkeM3j and must contain:

• **title** of the project: must be the big question and easily understandable by non-experts in the field. No jargon. It must end with a question mark.
(up to 150 characters with spaces)

• **name** of the candidate

• short **summary**
(up to 2,000 characters with spaces)

• comprehensive **introduction**, including the status of the research in the area.
(up to 10,000 characters with spaces)

• **conjecture:** What is your specific conjecture? Position your conjecture relative to what is already known in the field, mention examples, if any exists.
(up to 2,500 characters with spaces)

• **conjecture conception risk:** How might your conjecture be ill-formulated? Is it possible that your conjecture follows from already established techniques? Mention specific cases already solved, if there are any.
(up to 2,000 characters with spaces)

• **approach:** What approach will you use to try to prove/disprove your conjecture?
(up to 2,500 characters with spaces)

• **approach risk:** Why might your approach to prove your conjecture be inadequate? What alternative approaches might be useful?
(up to 2,000 characters with spaces)

• **originality:** Where is the originality in your project? In the big question, in the conjecture, in the approach?
(up to 2,000 characters with spaces)

• **impact:** Who cares? If you are successful in this project, what difference will it make and for which fields of knowledge?
(up to 1,500 characters with spaces)

• **origin:** How did you come up with the idea for this project?
(up to 1,500 characters with spaces)

• **team:** description of the profile of the team involved in the project
(up to 2,500 characters with spaces)

• **current collaboration network:** description of the network.
(up to 2,500 characters with spaces)

• **expansion of collaborative networks:** if it is the case, describe possible strategies to expand the network; please make sure to reflect its costs on your simplified budget
(up to 1,500 characters with spaces)

• **schedule** including the main milestones and objectives. Consider milestones as achievements that testify to the success of your project (these milestones may be adjusted in the future).

• simplified **budget** (expenses can be rebalanced among these categories in the future, as long as the total remains the same.).

• **bibliographic references**

Curriculum vitae
(if there was a significant change after submission in phase 1)
Curriculum vitae (PDF), maximum of two pages, strictly following the model available at **http://bit.ly/2kDe1Z2**.

Projects that are incomplete or that do not follow the guidelines described in this call will be disqualified and will not be reviewed.

8. Selection process

The evaluation of the proposals will be conducted mainly by scientists working in international institutions of excellence, with diverse gender and race profiles, whenever possible. A summary of the selection process is available in Appendix 2.

9. Stage 1: Selection of pre-proposals

Analysis of compliance
The Serrapilheira executive team will assess whether all documents submitted by the candidates meet the criteria for acceptance. Only proposals that meet all criteria will be included in the selection process. When necessary, experts can assist the executive team in this analysis.

Analysis of merit and criteria
The pre-proposals will be grouped into blocks according to the area (mathematics, computer science, physics, geosciences, chemistry, and life sciences). Each pre-proposal will be independently assessed by at least two evaluators from each area of study.

The following are analyzed based on the criteria of **scientific capacity, creativity, originality, and structuring of the proposal**:

 • **the academic trajectory of the proponent (curriculum vitae)**

 • **the contribution of the proponent thus far to science (scientific production indicated by the candidate and justification)**

 • **the answers to the questions listed above**

Each evaluator will send to the executive team an ordered list of up to six candidates per area.

The executive team will compare the ordered lists and, in cases of discrepancy, discuss with the evaluators and, if necessary, with ad hoc evaluators which candidates should be called to submit full proposals. At this point, the candidate's ability to briefly present their project and career and to formulate answers to questions will be evaluated by means of a brief telephone conversation.

The number of candidates invited to participate in phase 2 will be four to

The template of the form to be filled out by the reviewers is available at https://serrapi-lheira.org/ano/chamada-publica--no-6-2022-cien-cia/

five times higher than the final number of proposals to be supported, that is, between 40 and 50 young scientists from all areas.

The institute will not send reviewer´s comments to proponents not selected for phase 2.

10. Stage 2: Selection of full proposals

Analysis of compliance
The Serrapilheira executive team will assess whether all materials submitted by the candidate meet the criteria for acceptance. Only proposals that meet all criteria will be included in the selection process.

Analysis of merit
Each full proposal, consisting of a research project and curriculum vitae, will be independently assessed by at least two evaluators in the area according to the criteria detailed below. The evaluators will be the same as those who acted in phase 1; if necessary, new ad hoc evaluators may be activated.

Criteria
The evaluators must score all eligible proposals using a scale of 1 to 3 (strongly disagree - strongly agree) for each of the criteria listed below.

1 Quality of the proposal

1.1 **Originality**: whether the proposal presented by the candidate is original. The proposal cannot merely repeat previous research

1.2 **Boldness**: whether the project presented by the candidate is bold and creative

1.3 **Question**: whether the proposal presented by the candidate addresses a big question

1.4 **Impact on science**: whether the work presented by the candidate has the potential to broadly impact the field beyond a specific research domain

1.5 **Structure and presentation**: whether the proposal is well structured and presented

2 Viability
2.1 **Team composition**: whether the composition of the team meets the demands proposed for the development of the project

The template of the form to be filled out by the reviewers is available at https://serrapi- lheira.org/ano/ chamada-publica- -no-6-2022-cien- cia/

2.2 **Financial resources**: whether the financial resources requested and deadlines are adequate

3 Risk

3.1 **Hypothesis conception risk**: whether the assumptions behind the hypothesis might be incorrect or the hypothesis might not answer the big question (e.g., a proposed effect could either not exist or not generalize, be unrelated to the major question, some other hypothesis might better explain the data, it might go against established knowledge or the mainstream position of the field).

3.2 **Approach risk**: whether the proposed methodological approach, even if successful, will not provide adequate and useful information to test the proposed hypothesis (e.g., the approach is unconventional/heterodox, the object of study is too complex or variable for the proposed approach, the data that will be obtained bears little relation to the hypothesis, the field considers it impossible).

3.3 **Technical risk***: whether it is technically challenging to obtain the data following the proposed methodology (e.g., the methods are hard to implement, have critical steps that might fail, require a lot of persistence and trial-and-error, manipulation of complex equipment, require extensive field work or experiments, the object of study has a long natural time - geological timescales or animals/plants with long life cycles - or have many uncontrollable conditions.

* If the proposed project involves pure mathematics or does not involve the use of primary or secondary data, this criterion will not be applied.

4 Quality of the candidate

4.1 **Scientific capacity***: whether the candidate has the ability to develop rigorous research
The rigor of the research developed to date will be evaluated, regardless of the number of published articles.

4.2 **Creativity and independence**
• whether the scientist is creative and is able to generate their own ideas
• whether the candidate has a broad national and international network

Interview
Next, organized in panels of each area, the same evaluators who performed the merit analysis will conduct a remote interview with the candidates. Each candidate will make a ten-minute presentation in English and answer questions for another twenty minutes.

When submitting proposals to the call, the candidates are aware of and expressly agree to the interview and authorize it to be recorded in audio and video form for the specific purpose of analysis of its content by

Serrapilheira, as well as the examiners and persons responsible for the selection of candidates. The material collected is for the exclusive use of Serrapilheira.

The candidate must be proficient in English and able to clearly present their project and answer the questions objectively.

The ten-minute presentation should have the following structure:

• personal presentation, trajectory, and origin of the idea

• unequivocal identification of the fundamental question, the context in which it is relevant, the critical aspects for the success of the proposal, and the reasons why it is original and bold and what makes the project different

• use of visual resources (graphs, formulas, and, if relevant, preliminary results)

After the oral presentation, each evaluator must score the candidate from 1 to 3 (strongly disagree - strongly agree), based on the criteria established for this call, including their ability to defend and contextualize the big question, as well as to show they have a comprehensive understanding of their area of expertise. The members of the Serrapilheira executive team will not evaluate the presentations.

Each evaluator should send their score and comments from the review to the executive team before discussing it with the other panel members. The executive team
will then consolidate the scores and email them to the panel members. The executive team must present the consensus and indicate the candidates who received discrepant grades. Understanding the arguments in favor and against candidates without a consensus is the responsibility of the executive team, with the advice of independent ad hoc evaluators, if necessary.

At the end of the process, the panel of evaluators for each area will email a classification list of recommended proposals to the Serrapilheira executive team. Ties are allowed. If it is necessary to discuss the nominations in cases without a consensus, the executive team will organize a new meeting with the panel members.

The candidates who reach the final stage of the detailed analysis will receive the relevant reviewer´s comments.

Partnership with publicly funded research agencies

Serrapilheira established partnerships with the National Council of State Research Support Foundations (Conselho Nacional das Fundações Estaduais de Amparo à Pesquisa - CONFAP) and the publicly funded research agencies (Fundações de Amparo à Pesquisa - FAPs, FAPERJ, FAPESC e FAPESP) with the objective of increasing support for young scientists in the states. Partnerships can occur through two mechanisms. Through co-financing, Serrapilheira and FAPs will be able to jointly support, with mutually defined values, scientists selected by the public call of the institute. Unilateral support from the respective FAPs - with values defined by them - can be given to scientists who reached the final stage in the selection process of Serrapilheira but who did not receive support from the institute due to budgetary limitations.

The selection process (described in Sections 8 to 11 of the public call) will be conducted by Serrapilheira. In the case of the two funding formats defined above, the FAPs will have access to all the reviewer´s comments of the selection processes and may conduct, if they wish, individual validation and selection processing of candidates previously recommended by the selection panels of Serrapilheira. After the conclusion of the selection process and following the criteria of the public call, the Serrapilheira executive team will meet with the representatives of the FAPs to decide which projects will be supported. Those selected for joint or unilateral support must meet the administrative demands of the public call and the FAPs to receive the resources.

Final validation

Based on the recommendations of the panels, the Serrapilheira executive team consolidates and approves the final list of up to ten scientists selected in all areas, taking into account four factors: **qualifications, availability of financial resources, risk, and portfolio management**. The best candidates are chosen, regardless of their field of research.

Due to the factors mentioned above, not all proposals from the lists recommended by the panels will be selected; rarely, proposals that are not included in the recommended list may be included in the final selection. In this case, the executive team will submit its choice to the chair of the board of trustees of Serrapilheira and justify its decision by email to the members of the selection panels.

The approval of the final list of proposals to be supported will be submitted to the chair of the Board of trustees of Serrapilheira.

11. Final considerations for selection

Criteria in case of a tie
In the case of a tie, support is given preferentially to scientists who do not yet have independent resources for developing their research and to candidates of a gender or race that is underrepresented in their areas of knowledge.

Number of evaluators
The number of eligible proposals will determine the number of evaluators, and each pre-proposal and full proposal will be examined by at least two evaluators.

Submission of reviewer´s comments
Proposals that reach the final stage of the selection phase will receive a comment written by the evaluators of the area.

Notification to the evaluators of unconscious bias
In our methodology, we remind the evaluators of the existence of unconscious biases, which should be considered during the selection of proposals.

Serrapilheira commitment
 • People who have any conflicts of interest with candidates participating in this call will not evaluate these candidates
 • All proposals will be evaluated by qualified evaluators

12. Discretionary support

The executive team of the institute is free to support any project received through this call by using discretionary resources, obeying merit criteria and following the **code of ethics and professional conduct of Serrapilheira**.

In this case, the selected scientists will not be part of the cohort of scientists supported by this call and will be considered discretionary support scientists.

13. Relevant considerations

Demographic data

Why report demographic data? By freely providing demographic data to Serrapilheira, the candidates expressly acknowledge and agree to contribute to the improvement of the actions to stimulate diversity in science adopted by the institute. Access to these data is limited to professionals who participate in the formulation of the policies of the institute and observe the provision of Confidentiality and Data Protection of the Code of Ethics and Conduct of Serrapilheira. The possible treatment and disclosure of the demographic data collected in the call are restricted to statistical purposes, linked to the transparency of information by the institute, without implying any mention or individual identification of projects or candidates, and always observing the criteria of sensitivity, secrecy, and confidentiality provided in the current legal legislation. Evaluators do not have access to the data at any stage of candidate selection, and whether candidates provide demographic data does not affect the selection process. To decline to provide this information, select the option "do not report" for the item in question. The Serrapilheira privacy policy can be found **here**.

Best diversity practices in science

Serrapilheira believes that great results come from a science practiced under uncertainty and risk and that this is only possible when freedom of ideas and plurality of points of view are present. For this, a more diverse group of young researchers who think about science from different perspectives is essential. This is why we encourage ethnic-racial and gender diversity in science in Brazil. The "Best practices guide for diversity in science" is available on the Serrapilheira website at **https://serrapilheira.org/nossos-valores/**.

Best practices in open science

Serrapilheira requires that raw data and results obtained within the project over the period of support, including but not limited to, peer-reviewed articles, monographs, and programming codes, be published in publicly accessible repositories. Scientists supported by the institute should publish their work in free access journals or make an open access version available in a repository. The "Best practices guide in open and reproducible science" can be found on the Serrapilheira website at **https://serrapilheira.org/nossos-valores/**.

Intellectual property

If the research supported by this call result in patent processes, Serrapilheira will not claim intellectual property rights.

Code of conduct

The proposed research activities must obey ethical principles and the legal standards in force in Brazil. Compliance with the current legal rules and norms is the responsibility of the scientists supported by Serrapilheira. We demand from scientists respect for the environment and human and animal health, as well as the rights of privacy, physical integrity, data protection, and nondiscrimination. Failure to respect any of these rights may result in the cancellation of the allocation.

Research integrity

Serrapilheira firmly supports the integrity of research. In the event of the occurrence of proven cases of scientific misconduct, such as plagiarism, fabrication, or falsification of results during a project funded by Serrapilheira, the financial support will be canceled.

Legal point of view

The Serrapilheira Institute reserves the right to cancel, suspend, modify, revise, or postpone, at any time and at its sole discretion, the selection process referred to in this call, by means of a simple notice published in the same means of disclosure of this call.

No amount or reimbursement will be due, by any means, to any person, including but not limited to, potential candidates and candidates who have already submitted projects, or to institutions to which such candidates or potential candidates are linked, due of their participation and their respective projects in the selection process for this call because of their cancellation, suspension, modification or postponement.

The preparation of the projects and their respective submission to the selection process, which is the object of this call, are the full responsibility of the candidates, who must fully bear their costs. By adhering to this call, the candidates recognize that it is exclusively up to the Serrapilheira Institute to arbitrate the selection process by observing the procedures described herein.

The process of the selection of candidates by the Serrapilheira Institute will not be subject to any type of appeal, request for review or reimbursement of costs, expenses or compensation in the case of nonselection of submitted projects, in any phase or stage of the processes described in this call.

The Serrapilheira Institute may, at any time and regardless of the prior consent of the candidate or educational institution to which he or she is linked, develop and conduct, directly or indirectly, studies and research related to the works and proposals submitted through this call, including disclosing their results, respecting the commitment to confidentiality, as long as they are no longer public or of general knowledge at the time of the studies or research, as well as the ownership of their author(s).

To preserve the criteria of exemption and isonomy that guide the analysis and choice of competing practices and as a way to prevent potential conflicts of interest and/or violation of the rules set out in the Code of Ethics and Conduct of the institute, people with relationships of marriage, stable union or kinship by consanguinity or affinity, whether in a straight line, collateral or transverse, up to the second degree, with employees, directors, members of the board of trustees and scientific councils, or with evaluators or other service providers contracted for the selection of calls, will not be qualify, directly or indirectly, for the calls by the Serrapilheira Institute.

The deliberate nonobservance of this rule of impediment by any person who qualifies for calls by the Serrapilheira Institute will give the institute, at its sole discretion of convenience and time, the right of exclusion of the beneficiary of the call, with the consequent termination of the contract and cancellation of the obligations arising therefrom, including pecuniary obligations, without this characterizing unjustified termination of contract.

Exceptions to the rules provided herein must be decided by the Serrapilheira Institute board of trustees.

14. FAQ

https://serrapilheira.org/ano/chamada-publica-no-6-2022-ciencia/

15. References

The preparation of this call, including stages and selection criteria, is based on the following sites:

https://www.darpa.mil/work-with-us/heilmeier-catechism

https://erc.europa.eu/sites/default/files/document/file/eurecia_final_synthesis_report.pdf

https://funding.nordforsk.org/portal/#call/1584

https://www.macfound.org/programs/100change/strategy/

https://research.google/outreach/research-scholar-program/

Contact

chamada@serrapilheira.org
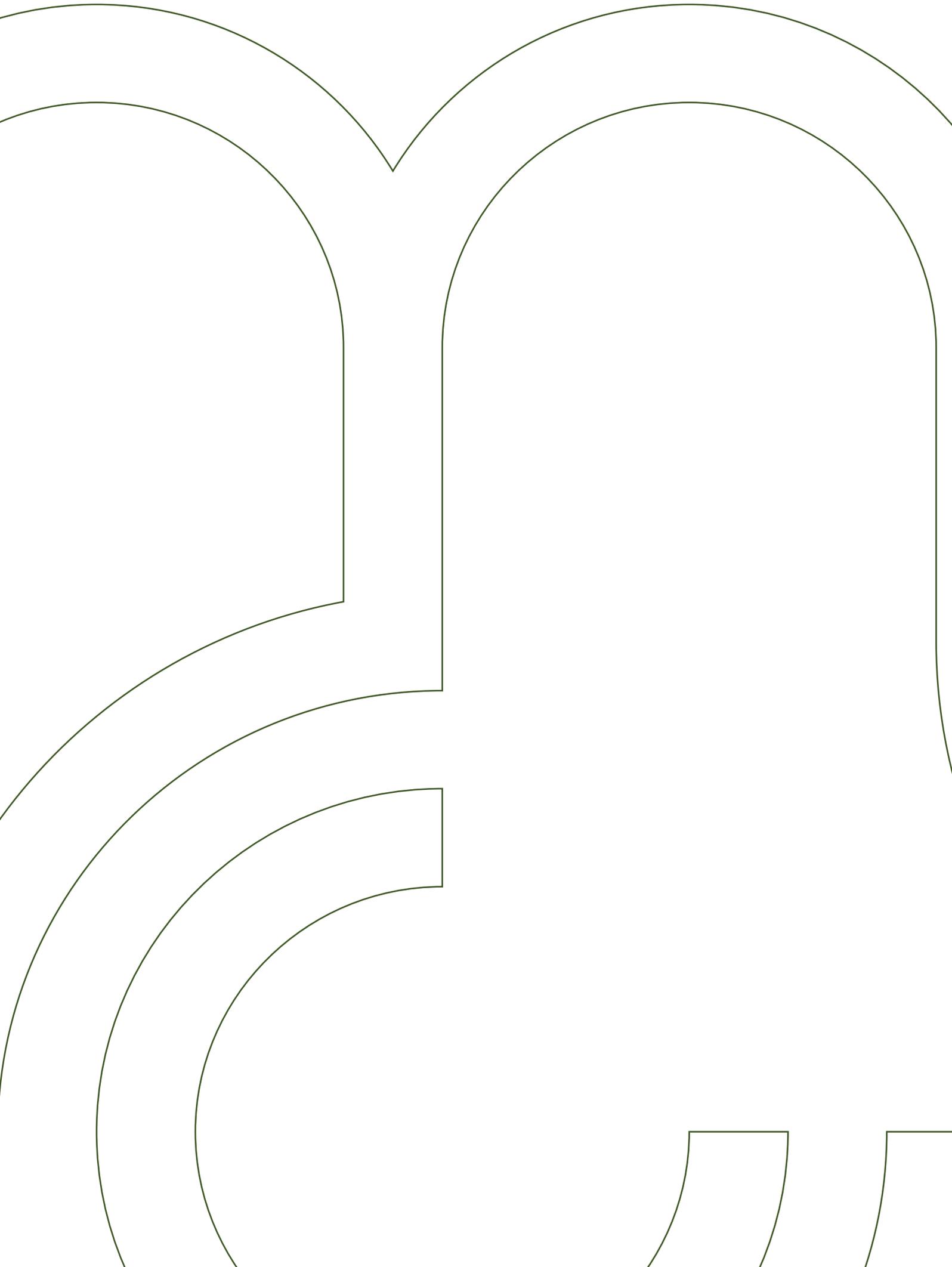
APPENDIX 1

Table of Serrapilheira scholarships

Modality	Value
Scientific Initiation	between 400 and 1245 reais
Teaching or research assistant	between 1,500 and 3,300 reais
Master's	between 1,500 and 3,253 reais
PhD	between 2,200 and 5,589 reais
Postdoc	between 4,100 and 11,060 reais
Young talent	between 8,000 and 18,000 reais
Visiting professor/Researcher	between 4,700 and 24,000 reais

Serrapilheira adopts ranges of scholarship values instead of fixed values, recognizing that:

• the cost of living varies significantly among Brazilian cities;

• the diverse socioeconomic conditions of the members of the research teams require a careful assessment; values associated with transportation, housing, and food can be added to the final amount of scholarship; and

• scholarships with higher values can help attract scientists from abroad.

Additionally, the value ranges allow for progression based on performance.

Serrapilheira also includes flexibility in the criteria for accepting scholarship recipients to consider the periods of career transition. For example, a student may benefit from a transitory scholarship pending the officialization of scholarships from state or federal agencies.

APPENDIX 2

Proposal selection process: summary scheme
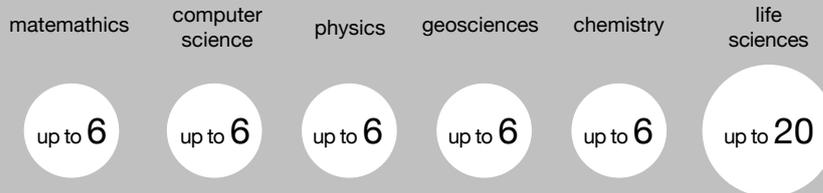
Phase 1: pre-proposals

Pool of pre-proposals

1.1 Analysis of compliance
Responsible: Serrapilheira executive team

↓

Pool of eligible pre-proposals

1.2 Analysis of merit
Responsible: evaluators

matemathics	computer science	physics	geosciences	chemistry	life sciences
up to 6	up to 6	up to 6	up to 6	up to 6	up to 20

↓

Pool between 40 and 50
recommended pre-proposals

→

serrapilheira

Phase 2: full proposals

Pool of full proposals
(between 40 and 50)

2.1 Compliance analysis
Responsible: Serrapilheira executive team

↓

Pool of eligible
full proposals

2.2 Analysis of merit and interviews
Responsible: evaluators

↓

Interviews

↓

Final validation
Responsible: Serrapilheira executive team
and Board of trustees

↓

Up to 10 approved proposals